# NO KIDDING!

FOR BOYS AND GIRLS

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## SPRING!

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Winners of all competitions will be notified by post and their names may be used in future issues of **No Kidding!** Competitions are not open to children of directors of GOS or contributors to **No Kidding!**

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The names of the children in this issue of **No Kidding!** are:

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**If you would like to be in No Kidding!, write to us at PO Box 10427, London N8 8UP. Make sure you send your address!**

**If anything exciting is happening at your school, or if you would like us to visit to tell you about how we make No Kidding!, get your teacher to ring us on 020 7655 0885.**

# INSIDE THIS ISSUE



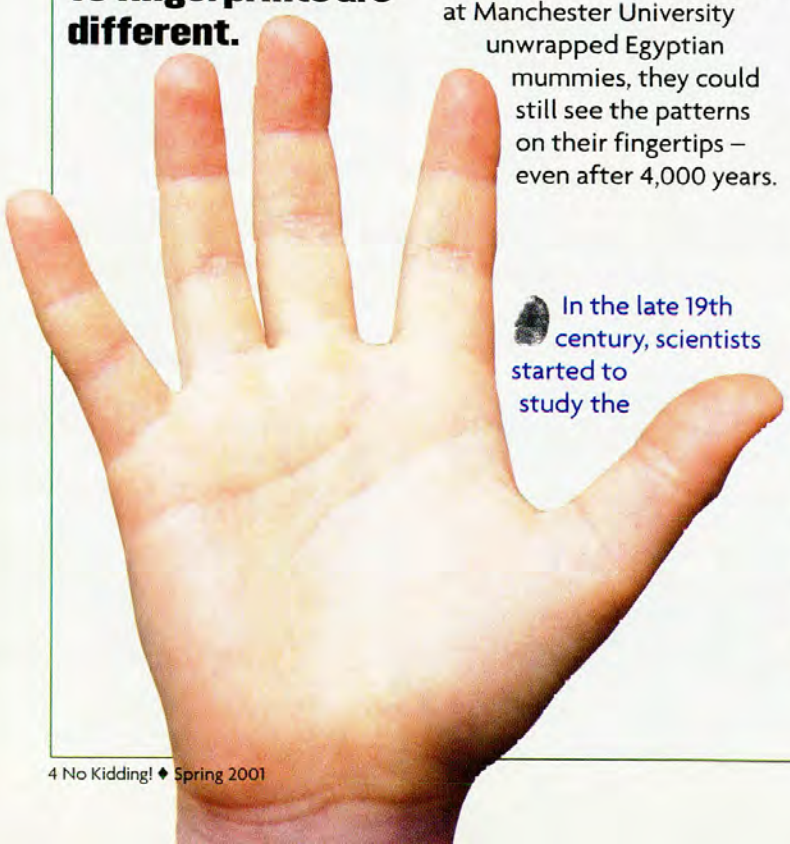
## WRITE HERE, WRITE NOW 2001

If you're in years 4 and 5, enter *Write Here, Write Now 2001*, an exciting writing competition run by the Department for Education and Employment.

To enter, you simply have to finish a piece of writing started by a famous writer – a story started by Jacqueline Wilson, a poem started by John Hegley, a script started by Phil Redmond or a piece of non-fiction writing started by Tony Robinson. You could win amazing prizes or see your work in a book, or on the internet. Entries to the competition, which will be launched on 22 March, must be sent by schools and not by individual kids, so ask your teacher to get a competition pack by telephoning 01634 729825 or by visiting www.writehere.org.uk on the web.

# DO YOUR FINGERS HAVE WHORLS, TENTS, LOOPS OR ARCHES?

**Look closely at your fingertips and you'll see patterns of tiny lines on the skin. You are the only person in the world who has patterns like this – and each of your 10 fingerprints are different.**



The lines are slightly higher than the rest of your skin and were made long before you were born when you were growing inside your mother. Even though your face and body will change as you grow up, your fingerprints will stay the same for the rest of your life. What's more, fingerprints are one of the last parts of the human body to rot away after death. When scientists at Manchester University unwrapped Egyptian mummies, they could still see the patterns on their fingertips – even after 4,000 years.

There are 4 types of patterns found on human fingertips: *arches*, *tented arches*, *loops* and *whorls*. A 5th type of fingerprint is called *accidental* and has no definite pattern. The loop pattern is the most common type.

Even though the lines on your fingertips are arranged in one type of pattern, they twist and turn in different ways within that pattern – they split differently and end suddenly. That's what makes everyone's fingerprints unique.

**Arch**

**Tent**

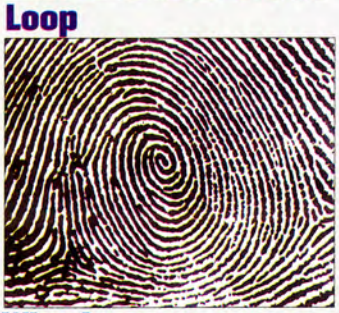
In the late 19th century, scientists started to study the patterns on our fingertips and found out there were different types of patterns – and that everybody's patterns were different. They worked out how to match fingerprints found at crime scenes to fingerprints taken from criminals. London police set up a special office to file and match fingerprints in 1901.

Criminals know their fingerprints can help police track them down, so some have tried to get rid of them. One American gangster paid lots of money to have his fingers stitched to his chest. They stayed there until the skin on his chest grew on to

● Some people believe your fingerprints say something about your personality. Others say the patterns on your palms can tell you what you're like and what your future holds.

These are the finger prints of Al Capone, an American gangster who was famous in the 1920s and 1930s.

**Loop**



**Whorl**

Because fingerprints are unique, the police can use them to help catch criminals. If you touch something, your fingertips sometimes leave an invisible mark made by sweat. The police use very delicate brushes to dust special powder made of ground-up metal over things criminals may have touched. The powder sticks to the oils and fats in the sweat and makes the marks show. These fingerprints can be photographed or *lifted* onto clear sticky tape – the metal powder in the shape of the pattern sticks to the tape. Police also use chemicals to help make invisible fingerprint marks appear on paper and wood.

Computers help the police compare print marks found at crime scenes with millions of fingerprints of criminals. If police think someone has broken the law, they take a record of their fingerprints – by dipping their fingertips in ink and then pressing them against a piece of paper – to add to the computer's memory. In the UK, the computer system is called AFR (Automatic Fingerprint Recognition) and it can compare hundreds and hundreds of fingerprints a second. But a fingerprint expert has to finally decide whether a print found at the crime scene matches a print taken from a person.

Sometimes police take fingerprints of people even if they don't think they have done anything wrong. If your house has been burgled for example, the police would need to know if fingerprints they find in your home belong to you and your family, or to the burglar. NK!

FINGERPRINTS COURTESY OF FINGERPRINT BUREAU CAMBRIDGESHIRE CONSTABULARY

his fingertips. When his fingers were finally cut away, the tips were smooth and had no patterns. But whenever he was arrested afterwards, the police knew who he was because he was probably the only criminal without fingerprints!

There are lines on the palms of your hand and the soles of your feet which are different from anyone else's too. That means palm and sole prints can also be used to identify someone.

No-one knows for sure why the skin on your fingertips, palms of your hands and soles of your feet is covered with patterns and is different to the skin on the rest of your body. Scientists think the raised lines help us hold on to things that we pick up and walk over. The lines may also help us feel things – and help get sweat out of our bodies more easily.

Humans are not the only animals to have fingerprint patterns. All types of monkeys and apes have individual fingerprints too.

# On APRIL 29 be counted

On Sunday 29 April, you and your family and everyone who lives in England, Scotland, Wales and northern Ireland will take part in the National Census. Your mum, dad, or other grown-up "in charge" at home will answer lots of questions about your family on a special form. The answers they give will help the government, local councils and other organisations plan for the future. If nobody knew how many people there were living in each area of the country, or anything about these people, it would be very hard to build the right number of homes and schools and to try to make sure, for example, that hospitals run the sort of services people need.

A Census has been taken in Britain every 10 years (except in 1941) since 1801. At that time, no-one knew exactly how many people were living in the country. Some thought the population was increasing and were worried there might not be enough food produced for everyone in future years.

The results of the Census taken in 1801 showed there were 9 million people then living in Britain. Nowadays, there are at least 3 times that many homes – and each of them has to be visited by *enumerators*, people hired to deliver the Census forms, to make sure they are filled in and to make sure they are returned. It's against the law not to return the Census form – people who don't return it, or who tell lies on the form, could have to pay a fine of up to £1,000.

Most of the questions on the Census form can be answered with just a tick – they are about ages of people who live in your home, whether they are male or female, whether they have a job and what that job is, about journeys they make to work, about which ethnic group they belong to, about their health and about the type of home you all live in. It should take about half an hour to fill in the Census form. The answers will be sorted into a pool of information which will be used over the next decade to help plan services used by your family and neighbours.

The Census is carried out by special parts of the government. In England and Wales, staff at the Office for National Statistics do the work. The General Register Office organises the Census in Scotland and the Northern Ireland Statistics and Research Agency does it for that part of Britain.

Work on the 2001 Census began almost as soon as the last Census in 1991 had been taken. There was even a Census "rehearsal" held in 9 areas in Britain in 1999.

The Census forms from England and Wales will be collected at a special office in Cheshire where computers will be used to scan and sort the information. Pictures of the Census forms will be put on microfilm and kept in storage – but they can't be looked at for 100 years. That means any personal information given on the Census form is kept secret. Then the paper forms will be destroyed. It will take months to record and sort all the information collected on the forms – the results of the Census will start to be published from Summer 2003.

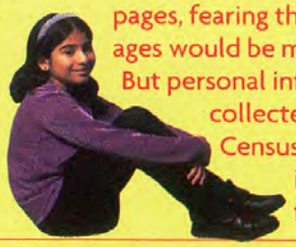
Everybody living in every city, town and village should be recorded on a Census form, including people who do not have a home and who are sleeping rough. 30 million Census forms are being printed and about 70,000 people will be working to try to make sure everyone is counted. NK!

● **The ancient Greeks and Romans took Censuses many years before the birth of Jesus. Caesar Augustus ordered a Census be taken every 5 years: every man living within the Roman Empire then had to return to the place where he had been born to be counted. That is why Mary and Joseph were in Bethlehem when Jesus was born.**

● In 1086, William the Conqueror ordered information be collected about people who lived in his kingdom for the Domesday Book. It took years to complete and gives historians lots of information about life in Norman Britain.

● **In Stuart and Tudor times, Church bishops organised the counting of people in the area, or diocese, of which they were in charge.**

● **No Census was taken in 1941 even although one was due to take place. This was because of the Second World War.**



● When the 1951 Census was taken, women were asked to be more honest about their age! At the time, many women felt it was too personal to ask how old they were. Lots of worried women wrote to magazine problem pages, fearing their true ages would be made public. But personal information collected during a Census – like age – is kept secret for 100 years.

## More than 53,000 primary and secondary school kids across the country have filled in a special census form just for them on the internet. The results of *CensusAtSchool* show:

- 16 per cent of primary school kids have a mobile phone.
- Manchester United is the favourite football team amongst both primary and secondary school kids.
- 78 per cent of primary school kids use a computer at home.
- 54 per cent of primary school kids use the internet at home.
- Nearly 47 per cent of kids go to school by car. 43 per cent walk.
- Art is the favourite subject at primary school. The second favourite subject is PE and sport.

*CensusAtSchool* is a survey of school kids managed by the Royal Statistical Society Centre for Statistical Education in partnership with the Office for National Statistics. Schools in England, Wales and northern Ireland are taking part in the project – pupils were asked to fill in their own census form last November.

The form for primary school kids asked them their birthday, place of birth, height, length of their right foot, whether they have access to a computer and the internet at home, if they own a mobile phone, how many people live in their household, what pets they have, their favourite subject at school and how they travel to school each day.

You can see the results so far and find out more about the project by visiting **www.censusatschool.ntu.ac.uk** on the web.

● The 2001 Census will cost about £255 million. This covers the cost of work from 1993, when planning began, to 2006, by which time all the information collected will have been published. The government says the Census will provide vital information which will make it posssible for billions of pounds of public money to be shared out in the best way over the next 10 years.

● The 2001 Census will count British citizens who live abroad because they are in the armed forces.

# It's a bird, but it can't fly. It can run as fast as 70km an hour. It's an ostrich

**Ostriches are too big to fly: they are the tallest and heaviest birds on earth. Male ostriches usually grow to be about 2.5 metres tall and weigh about 135kg. Experts have worked out that birds need to weigh less than 18kg to soar high in the clouds.**

The huge ostrich's wings are small and have a fan of 16 fluffy feathers. These feathers – and feathers from other parts of their bodies – are one of the reasons why ostriches have been hunted by humans.

At one time, it was very fashionable to wear ostrich feathers and to use them as decoration. Some of the silky feathers are very large and can be dyed almost any colour. In the 18th century, so many ostriches were killed for their feathers, they were nearly wiped out. Humans started to keep ostriches on farms in the middle of the 19th century and this helped stop the bird from becoming extinct. The ostriches could be plucked rather than hunted and killed, and farmers could keep baby ostriches. Nowadays, you only find ostriches living in the wild in Africa, but they are kept on farms in many parts of the world – like South Africa, America and Australia. As well as wanting their feathers, humans eat ostriches and use their skin to make leather.

Humans also eat ostrich eggs – these eggs are larger than those laid by any other bird, usually between 15 and 20cm long. Male ostriches live with a flock of hens and all the hens lay their eggs in one nest at the same time. When the hens have finished, there may be between 10 and 40 eggs: the most ever recorded was 78! But the bossiest hen in the flock will push some of the other hens' eggs out of the nest. The bossy hen sits on the eggs during the daytime, but the male ostrich will take turns to guard them at night. After about 40 days, chicks hatch from the eggs: they are able to run almost immediately and become fully grown after about 6 months.

PHOTO: DES & JEN BARTLETT

Male ostriches are black and white while the slightly smaller hens are greyish brown. The birds' long, strong legs help them reach high running speeds. They can take giant steps when they're running – each step can measure 3.5m. And they can keep up a speed of around 50km an hour for about 15 minutes, which means they can out-run quite a few enemies. They also use their strong legs to kick out at attackers, and use claws on their 2 toes as weapons.

The ancestors of ostriches may have been able to fly. The bones in ostrich wings are joined together in the same way as they are in the wings of birds who can fly, and the feathers are in the same place as "flight" feathers.

PHOTO: OXFORD SCIENTIFIC FILMS FRIEDRICH VON HOR

Millions of years ago, there were many types of birds that couldn't fly. The dodo and the giant moa of New Zealand only became extinct within the last few hundred years.

There are other birds that can't fly: the emu, the kiwi and the penguin, for example. Penguins have short legs so they can't run fast, but they use their wings like flippers to speed through sea water. The emu is Australia's tallest bird while kiwis live in New Zealand forests. Kiwis come out at night to eat and sniff out earthworms and other small animals using nostrils at the end of their beaks.

There aren't any feathers on an ostrich's legs and their long necks are covered in short feathers which are more like hairs. Their heads are small and they have big eyes and excellent eyesight.

They can survive without water for a long time, which is just as well because there is often little water in the dry grassland and desert where they live in Africa. They eat almost anything: mainly plants and flowers, but sometimes bits of animals left behind by meat-eating creatures, big insects and even lizards and other birds. They can live for up to 50 years.

Some people say ostriches hide their heads in the sand when they are in danger: you may even have seen cartoon ostriches doing that! In real life, they don't. NK

# THE BUDGET

**If your family plans a holiday, your mum or dad needs to work out how much it will cost – and how they are going to pay for it.**


They will add up the cost of getting there – 'plane tickets or train fares, for example – the cost of staying there – in a hotel, caravan or villa – and the amount of spending money they want to take.

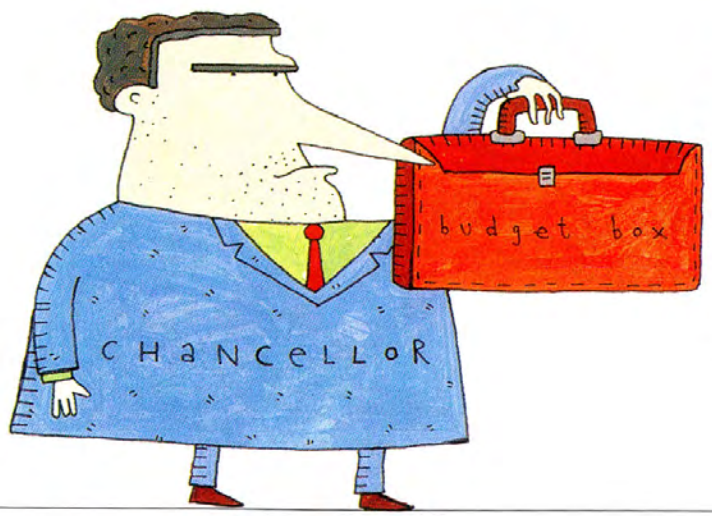
Then they will work out where they are going to find the money they need. If you're going away in June, some of the money might come from the salary your mum or dad earns at work that month. They might take some out of a savings account. If they can't find the total amount of money they need, they might borrow some – from a bank or by using a credit card. When they have decided where the money will come from to pay for the holiday, they will have a "budget".

In much the same way, the government has to plan a Budget every year. It adds up the cost of everything it wants to spend – on schools, for example, on hospitals, on the police, on pensions for older people, wages for soldiers, on building new roads. Then the government works out where the money to pay for everything is going to come from. Your family's holiday budget might total a few hundred pounds – the government's Budget adds up to billions of pounds.

The Prime Minister asks someone to be Chancellor of the Exchequer – the person in charge of working out the Budget each year. At the moment, the Chancellor is Gordon Brown.

The government's new spending year starts on 1 April which is why Mr Brown announced his 12 month Budget in March. Some of his plans for the year starting 1 April 2001 and ending 30 March 2002 were announced last Autumn

£ The Chancellor makes a speech in the House of Commons about his plans for the next year on Budget Day – this year 7 March. This is called the Budget Speech. Chancellors carry their speeches in a Budget Box, a sort of briefcase: you might have seen pictures in newspapers of Gordon Brown with his Budget Box on his way to the House of Commons.




£ Budget Speeches can last for a long or short time. The longest is said to have been made by William Gladstone when he was Chancellor in 1853. He spoke for 4 hours and 45 minutes. Benjamin Disraeli is said to have made the shortest ever Budget Speech when he was Chancellor in 1867. It lasted for 45 minutes.

so powerful people could have a chance to say what they thought before the Budget was finally agreed.

Once the government has worked out how much money it wants to spend – *expenditure* – it needs to decide where the money is going to come from – *income*.

Mr Brown collects money from everyone who lives in this country through different types of *taxes*.

For every pound a grown-up earns at work, the government takes some away. This is called income tax.

When someone buys their home, they have to give some money to the government – this amount is called stamp duty.


If a company makes money, it has to give some of it to the government. And lots of things you buy in the shops have a bit extra added to the price which goes to the government – that extra is called VAT (Value Added Tax). Mr Brown also adds on an amount called *duty* to the price of petrol, cigarettes and alcohol to help pay for the government's spending plans.

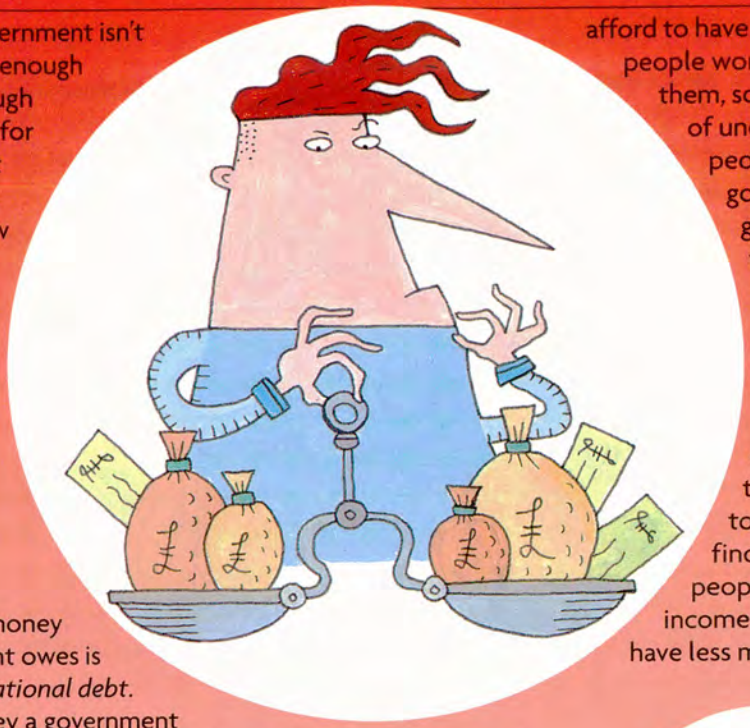
If the government isn't going to get enough money through taxes to pay for everything it wants to do, it can borrow money, just like your mum and dad can borrow money to help pay for your holiday. The total amount of money a government owes is called the *national debt*.

The money a government borrows comes from companies that look after people's savings. These companies hand over money in return for pieces of paper called Treasury Bonds or gilt-edged securities. The government then pays those companies regular amounts of money called *interest*.

When a government borrows money, it has to pay it back sometime – and has to pay the interest. To do this, governments can either make taxes higher – or borrow more money.

The Budget set by the government each year affects everyone.

The amount of income tax taken away from people's wages means they take home



more or less money – and have more or less to spend.

If the government sets high taxes, people might get fed up because they have less money for themselves. If companies have to pay a lot of tax, they can't always afford to have lots of people working for them, so the number of unemployed people could go up. The government then has to spend more on benefit money for unemployed people, and on schemes they organise to help them find work. If people pay high income tax, they also have less money to save. NKI

£ The Chancellor goes on television on the evening of Budget Day to tell viewers about his plans.

£ The Budget becomes law in a Finance Act which is made by the government each year.

# Who built this?

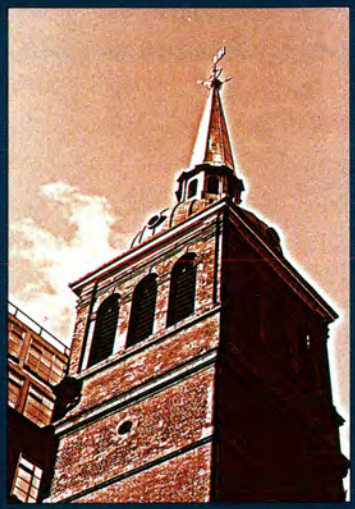
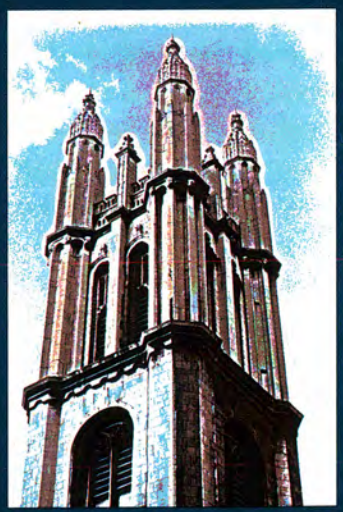
**Christopher Wren is said by many people to be the greatest architect that ever lived in this country. Perhaps the most famous building he designed is St Paul's Cathedral in the centre of London. He also designed some 50 churches in the capital to replace those burnt to ashes in 1666's Great Fire of London, as well as royal palaces and many buildings at universities. He lived until he was 91 and worked for 5 different royal rulers. But even though he is remembered as a great architect, he started his career as a scientist and was thought to be one of the most brilliant scientists of his time.**

When Christopher Wren was born in 1632, it was almost impossible to go to school and university, get a good job or have time to do scientific experiments unless your family was rich. Christopher's mum and dad were quite wealthy and knew powerful people: his dad was a vicar and his family knew the Royal family. When Christopher was a little boy growing up in Wiltshire, he had a private tutor and played with the sons of other rich familes.

When he was born, Charles I was England's king. He was the ruler who lost his head after the war between his supporters – the Royalists – and powerful people in Parliament – the Parliamentarians – who thought the king had got too big for his boots. After the Parliamentarians won the war and the king was beheaded, Oliver Cromwell took charge of the country. Families like the Wrens, who had supported the king, lost their power and Royalist men lost their jobs – this happened to Christopher's dad. After Cromwell, Charles II became king in 1660 and most Royalist families became powerful and rich again.

Christopher was sent away from home to Westminster School when he was just 8 years old. When he left, 6 years later, he became the pupil of Dr Charles Scarburgh, a scientist and surgeon. As well as learning from him, Christopher helped Dr Scarburgh do



REHAN JAMIL

experiments to find out how the human body worked. The 14 year old Christopher made moving models to show how the muscles in our arms and legs work which the doctor used when he was teaching other surgeons.

In his spare time, Christopher did his own experiments and invented all sorts of machines and gadgets. He also worked out a sign language using fingers and hands for people who couldn't hear or speak.

When he was 17, he went to college at Oxford University. As well as studying for a degree, he helped scientist Thomas Willis investigate how the human brain works. Christopher continued to experiment himself: he built a model of a human eye and started investigating blood transfusions – adding one person's blood to another person's body. He made all sorts of things – a loom that could weave several pairs of stockings at once, musical instruments, a transparent beehive. He wrote essays about new codes and ways of making drinking water out of sea water. He studied the sun, the moon, the planets and the stars.

Christopher was thought to be so clever that he was offered a job as Professor of Astronomy in a London College when he was just 25. That meant that during term time, he taught men, mostly older than himself, about the moon and the stars. He became Professor of Astronomy in Oxford 4 years later, teaching students there too.

At Oxford, Christopher met regularly with a group of very clever scientists to talk about new ideas and discoveries. They called themselves the Philosophical Society. After Cromwell died and Charles II took over, the new king supported this society and gave it his backing. In 1662, the group became known as the Royal Society – this scientific society still exists today.

Some 20 years later in 1681, Christopher Wren took a turn at being president of the Royal Society.

At Oxford, Christopher also met Robert Hooke, a student 3 years younger than himself: they were friends for the rest of their lives. They both loved science, they both liked going to the theatre and playing chess – and they both loved drinking coffee. They often met in coffee houses – early "cafes" which were new in London at the time.

By the time he was 30, Wren was very famous. What's more, he knew many powerful and wealthy people through his family. In 1663, his uncle, who was Bishop of Ely, asked him if he would be interested in designing a new chapel for a college at Cambridge. More or less at the same time, he was asked by someone else to design a theatre for a college at Oxford. Wren said "yes" to both jobs – this was the start of his change of career.

In 1665, while thousands of Londoners died from the Plague, Wren was in Paris. He had visited the French capital to find out more about buildings and he met many French and Italian architects working there. He also learnt how to build domes on top of buildings – like the one that now sits on top of St Paul's Cathedral.

A few years earlier, in 1661, the Bishop of London had asked Wren to take a look at the old Cathedral because it was falling to bits. It had been damaged in a fire about 100 years before, and during the war between Charles I and the Parliamentarians, bits of the building had been broken. When he returned from Paris, Wren wrote a report about St Paul's, suggesting a huge new dome be built on top of it as part of the work needed to mend the building.

**Continued over the page**

Christopher Wren was married twice. In 1669, his bride was Faith Coghill, whom he had known since they were children. Faith died in 1675 after she had had 2 children – Gilbert, who died as a baby, and Christopher, who was born the year his mother died. In 1667, Wren married Jane Fitzwilliam. After 4 years, she too died, also having had 2 children – Jane and another son, William. William had disabilities and was looked after all his life by his father and big brother Christopher. Wren's daughter Jane is buried in St Paul's Cathedral.


PICTURE COURTESY OF THE ROYAL SOCIETY

**Christopher Wren became Sir Christopher when he was knighted by King Charles II.**

# ...and  these?

But then St Paul's Cathedral was completely destroyed during the Great Fire of London in 1666. The building could no longer be mended – so Wren was asked to design a brand new Cathedral, starting from scratch.

By 1673, he had made a model of a new Cathedral which Charles II liked. Other people didn't think much of it though, and made a fuss about the design. So Wren came up with a plan for a more boring building which everyone approved. But the king also agreed that Wren could make changes to the plan as the Cathedral was being built.

Work started on the new St Paul's in 1675 – the first task was to clear away the ruins of the old building and Wren did this by using gunpowder and a battering ram. The new Cathedral was not finished until 1708, by which time Wren was 76. His son Christopher, who had been born the year the building started, put the last stone on the Cathedral. The finished building didn't look anything like the boring design that had been agreed before work began!

The building work was paid for by a "tax" on coal – people paid a bit more for coal and the extra was spent on the Cathedral – and by money given by different people. When the money started to run out, Wren even got himself elected to Parliament where he voted to continue the tax on coal to pay for the building work.

Some people got fed up because it was costing so much and taking so long to build. In 1697, half of Wren's pay was stopped until the Cathedral was finished. In 1710, he asked Queen Anne, then in charge of England, for all the money he was owed. Queen Anne paid him, even though some people thought she shouldn't because the Cathedral didn't look anything like the original plan that had been agreed.

Wren had first started working for the royal ruler back in 1669 when Charles II had offered him the job of Surveyor General. That job meant he was in charge of the Office of Works that looked after all the property owned by the royal family. It also meant he had to design and build new royal buildings.

So while the building work at St Paul's was going on, Wren was designing new buildings like the Royal Hospital, Chelsea, adding bits on to Hampton Court and transforming a house in Kensington into Kensington Palace. He built an observatory at Greenwich and continued to design

GREAT FIRE OF LONDON DUTCH SCHOOL/MUSEUM OF LONDON

The Great Fire of London started on 2 September 1666. Baker Thomas Farrinor had a fire beneath the oven in his shop in Pudding Lane, near London Bridge, in the City of London and did not put it out properly. His shop went up in flames in the early hours of the morning – those flames were carried on the wind to nearby houses and shops. In those days, the buildings in London were squashed together in narrow streets and mostly made of wood – they burnt easily and the fire spread quickly. By the next morning, some 300 houses as well as warehouses next to the river Thames and the north end of London Bridge were burning.

There were no firefighters then, so people tried to stop the fire spreading by pulling down houses or blowing them up. But it was no good – the fire did not die down until 6 September when the wind stopped blowing.

The City was in ruins – two-thirds were burnt to ashes. The part that was most damaged was the richest area where many businesses were based. 13,200 homes and 87 churches had been destroyed. More than 100,000 people were homeless.

On 11 September, less than a week after the Fire had stopped burning, Christopher Wren gave Charles II a plan for building a brand new City. Other people also gave the king ideas for building a new

buildings at universities, and to design churches. He led the team which was building 51 new churches to replace the 87 in the City of London that had been destroyed by the Great Fire. As Surveyor General, Wren worked first of all for Charles II, then for James II, then for King William and Queen Mary, then for Queen Anne and finally for George I – who sacked him.

Wren was a very old man by then: he had lived for a long time, which was unusual in those days. Most of his friends, including Robert Hooke, had already died. Unlike most architects who had designed other cathedrals, he was still alive to see St Paul's finished. He retired to a house he rented near Hampton Court and once a year visited St Paul's, staying in a house he rented in London. On 25 February 1723, he went to the Cathedral and sat under the huge dome. Later that day, after dinner, he fell asleep in his chair and died.

He was buried in St Paul's. These are the words his son Christopher chose to remember him on his grave: "Below is laid the builder of this Church and City, Christopher Wren, who lived more than ninety years not for himself, but for the public good. Reader, if you need a monument, look around." NK!

London – including Wren's friend Robert Hooke. Wren's plan had broad avenues and wide streets, big squares and open spaces. The City was to be surrounded by trees and plants and all the businesses that used fire or made smells were to be based outside the City.

Nothing was ever done about Wren's plan, or any of the other ideas for London. Charles II had to act quickly to offer homes to the people living in open fields – and give the businesses in the City somewhere to work. The King also didn't have enough money to build a brand new London. On 19 September, he announced London homes and businesses should be rebuilt along the same streets – but that those streets should become wider and the buildings should be made of brick and stone. Hundreds of workers got jobs: by 1672, much of London had been rebuilt.

■ Frenchman Robert Hubert was hanged in October 1666 for starting the Great Fire of London – although he was not even in England when the fire was burning! Hubert was accused of arson – of setting fire to Thomas Farrinor's house on purpose. People needed to blame someone!

# IN EUROPE

**Wednesday 9 May is Europe Day. Will your school be doing anything to celebrate?**

9 May was the day back in 1950 when the idea of today's European Union was first talked about. In Paris, a French politician suggested France and Germany work together to make steel and coal. It wasn't that long after the Second World War when France and Germany had fought against each other. Coal and steel had been used to build many of their weapons.

Today's European Union grew from that idea. In 1957, six countries agreed to work together: nowadays there are 15 countries that belong to the EU, and more want to join. The leaders of EU countries believe it is better to share some of their problems and try to work together to solve them. People from each country meet together regularly and decide to do things they think will make life better for for everyone living in all the countries. Countries still make decisions by themselves about a lot of things – including what happens at school!

Every 5 years, people in the countries which are members of the EU get to choose Members of the European Parliament, or MEPs, by voting for them. The MEPs meet in Strasbourg in France and Brussels in Belgium to talk about important issues and decide about new European laws.

On Europe Day, organisations and schools throughout the EU organise festivals and events to celebrate the cultures of different countries or to find out more about the European Union. Ask your teacher if you there will be anything happening at your school on 9 May. NK!

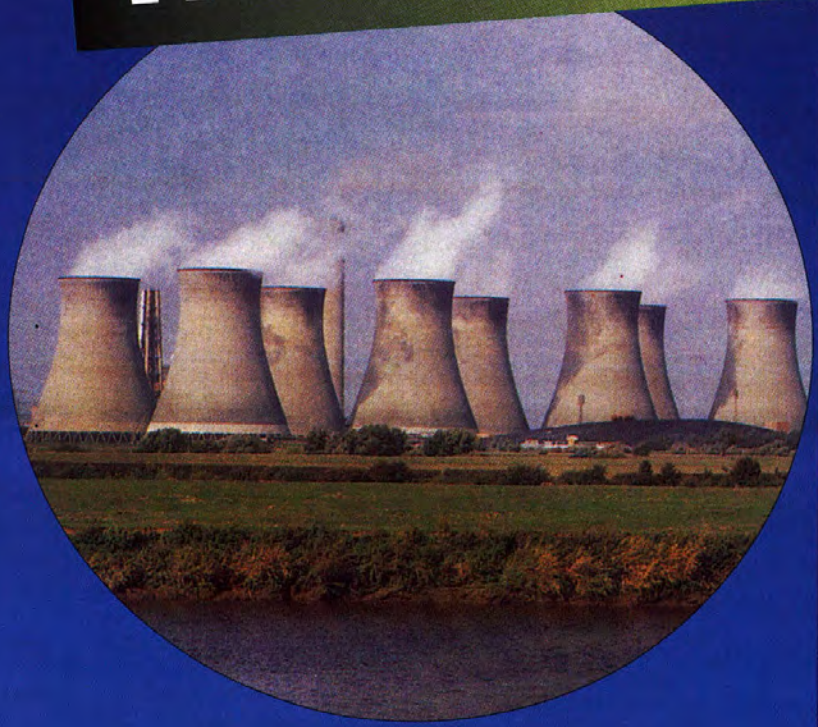
If you want to find out more information about the European Union, get a grown-up to contact the UK Information Office of the European Parliament, 2 Queen Anne's Gate, London SW1H 9AA 'phone 020 7227 4300, fax 020 7227 4302, www.europarl.org.uk Why not ask your teacher to invite your local MEP to visit your school?

There are 11 languages spoken in the European Parliament – Danish, Dutch, English, Finnish, French, German, Greek, Italian, Portuguese, Spanish and Swedish. Can you find out how to say "good morning" in all of them?

The EU has its own flag and its own anthem – or theme tune – too. The anthem is *Ode to Joy*, written by Beethoven. You could ask your teacher to play it in the classroom on 9 May.

LPN
Powering London

# How does electricity get from here



In London, there are about 30,000 km of cables, mostly buried underground, that bring electricity to homes and other buildings. These cables are owned by the company London Power Networks (LPN). LPN is part of a bigger company, London Electricity Group. The electricity carried on LPN's cables may have been made in power stations hundreds of kilometres away from the capital, and may have travelled great distances. About 25 different companies make electricity at power stations up and down the country. All this electricity is carried around the country on the *National Grid*, the name given to the network of underground cables and overhead cables, supported on huge pylons.

In London, LPN's cables bring electricity to 2 million customers – most of them families like your own. But LPN also makes sure electricity gets to other buildings – like schools, shops, banks, museums, theatres, government buildings and even Buckingham Palace. All of these customers rely on LPN to keep the cables working properly and to make sure they get electricity.

If there is a power cut in your neighbourhood, the chances are something has gone wrong underground. Look out for vans with *24 Seven* written on the side. This is the company paid by LPN to fix any problems. LPN spends millions of pounds each year on replacing and checking the cables to make sure they are in good condition so they carry electricity safely – and so things don't often go wrong.

The London Electricity Group is owned by an even bigger company, Electricité de France (EDF).

**If you want to find out more about electricity, get your teacher to ring the LPN education advisers on 020 7725 3040 and arrange a visit to your school.**

■ Electricity comes into your home through a fuse. This fuse will stop the electricity if too much accidentally surges along the cable, or if there is a fault.

A meter measures how much electricity you use at home so your family is charged the right amount of money. Customers are charged for each *kilowatt hour* (kWh) of electricity they use. One kWh is the amount of electricity roughly used if 10 x 100 watt light bulbs are left on for one hour – *watts* are used to measure the amount of electricity a lightbulb or a machine uses. So a 60 watt bulb uses less electricity than a 100 watt bulb.

The cable that brings electricity into buildings divides into separate smaller cables to make up *circuits* that carry electricity to different parts of your home. A circuit is a circle of wires that allows the electricity to flow into the machine that needs it. Electricity that is not used flows back out of the machine and goes around the circuit again. There is a separate circuit for your lights, a circuit for your plugs and a circuit for your cooker, for example. Each circuit has its own fuse: if too much electricity surges along the circuit wires, the fuse stops it immediately.

■ Electricity is billions and billions of tiny things called *electrons* that are on the move. Everything is made up of atoms, including us, and an electron is part of an atom. When electrons jump from one atom to another, electricity is made. Electrons on the move are called a *current*. Only some materials let electrons move inside them. These materials are called *conductors* – copper, steel, aluminium and other types of metal, for example. Other materials made of different types of atoms – plastic and rubber, for example – don't let electrons move inside them. These materials are called *insulators*. LPN uses insulators to coat their cables to stop the electrons leaking out.

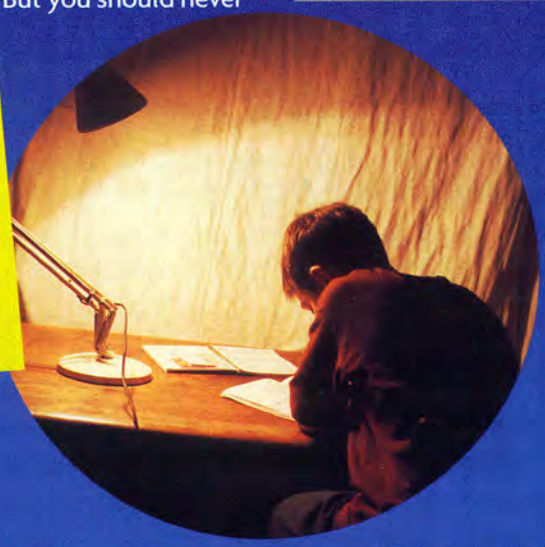
■ The electrons are made to move and then pushed onto the National Grid by generators at enormous power stations that work night and day to make electricity. The generators are powered by steam made from water heated by burning coal, gas or oil, or by nuclear power. London Electricity Group owns Cottam Power Station on the River Trent in Nottinghamshire. Cottam burns 6.5 million tonnes of coal each year in 4 huge boilers and can make enough electricity for 2 million customers.

When electricity leaves a power station, it is pushed out along the cable with great force. The harder the electrons are pushed along a cable, the higher the *voltage* of the electricity. The higher the voltage of electricity, the more dangerous it is to people.

Outside London, cables are held very high in the air by pylons, out of our way. But you should never fly a kite where there are overhead cables. Because the voltage is so high, the electricity could jump from the cable on to the kite and whizz down to person holding the string below. Electricity can kill.

The voltage of electricity has to be made smaller before it enters your home. LPN looks after different sized substations that have transformers inside to reduce the voltage of the electricity on its way to your home so it can be used safely by your family. If there is a substation near your home or school, stay away from it. It will have a notice saying *Danger of Death*. Never try to go inside. The equipment there could kill you. NK!


# to here?



# Wordsearch mammals

**Scientists have named about 2 million different animals in the world – but think there are millions more. Scientists put or *classify* animals which are similar into different groups. Mammals, for example, all have backbones and are all covered in fur or hair. Mammal mums feed their babies on milk – most mammal babies grow inside their mothers, but a tiny number hatch from eggs. Egg-laying mammals are called monotremes and there are just 3 types that scientists know about. Have you heard of any of the mammals listed here – and can you find them in the wordsearch on the next page? Their names run vertically, diagonally, horizontally, from right to left or from left to right.**

An **AARDVARK** lives underground in Africa during the day and comes out at night to search for ants and termites.

The **AGOUTI** is in the same family as a rat – these mammals are called rodents. The word rodent comes from the Latin word rodere which means to gnaw. The agouti lives in central and south America.

The **ALPACA** lives in the Andes mountains in south America and is covered in fine long wool. The wool grows so long, it sometimes touches the ground.

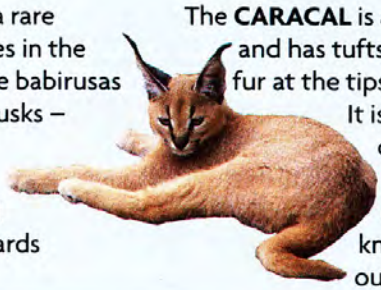
An **AYE-AYE** is about the size of a cat and lives in rainforests in Madagascar. Its middle fingers are longer than the rest and it uses them to tap on tree trunks. If the aye-aye hears something moving about inside, it uses the long finger to pull out its dinner. The aye-aye is a primate like moneys and apes.

A **BABIRUSA** is a rare wild pig that lives in the Philippines. Male babirusas have 2 pairs of tusks – the top pair grows through their snouts and then bends towards their eyes.

A **BOBCAT** is a big north American cat.

The **BOUTO** is the world's largest river dolphin. It lives in the Amazon and in the Orinoco in south America.

The **CAPYBARA** is the world's largest rodent and looks a bit like a giant guinea pig. It is a good swimmer and can even stay under water for up to 5 minutes.



The **CARACAL** is a big cat and has tufts of black fur at the tips of its ears. It is brilliant at catching birds and can even knock them out of the sky.

A **LANGUR** is a monkey with a black face that lives near people's homes in India and Sri Lanka – and sometimes steals food.

A **CAVY** is a small south American rodent closely related to the guinea pig.

A **CHINCHILLA** is a grey rodent, about the size of a rabbit, that lives high up in the Andes mountains in south America. People like its soft fur and millions are kept in cages so their fur can be made into coats. In the wild, it is quite rare.

A **CHITAL** is a deer that lives in India. It is red-brown and has white spots.

The **COATI** belongs to the same family as a raccoon, lives in America and has a long stripey tail.

The **COYOTE** belongs to the dog family and lives in north America and Mexico.

A **DINGO** is an Australian dog. This mammal was taken to Australia by people who settled there and now runs wild across the outback. The dingo cannot bark!

The **DOUROUCOULI** or night monkey is a small monkey that searches for food when it's dark.

A **DROMEDARY** is a camel with one hump. It can drink more than 50 litres of water at a time to help keep it going across the desert.

The **ELK** is the world's largest deer and is also called a moose.

A **FOSSA** is a creature with red-brown fur and a long thin tail. It lives in forests in Madagascar and searches for food at night.

The **GNU** or common wildebest has eyes set close together and a straggly beard and lives in large herds in east and south Africa.

An **INDRI** looks a bit like a grey and black teddy bear and lives high in the trees in Madagascar. It is a primate, the same type of mammal as a monkey.

The **JAGUAR** is a good swimmer, unlike most cats.

The **KOALA** is not a bear! It is a marsupial, a mammal that looks after its babies in a pouch, like a kangaroo. The koala just eats the leaves of the eucalyptus tree.

A **KOB** is an African antelope that has white rings around its eyes. If another animal frightens it, it bounces high in the air.

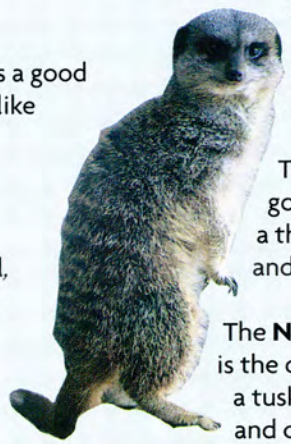
A **LEMMING** is a Scandinavian rodent that moves around with family and friends in search of food.

The **LYNX** lives in the forests of north America, Europe and Asia. The big cat has a short tail and tufts of hair on its ears.

The **MANDRILL** has a red and blue face, is related to the baboon and is the heaviest monkey in the world. It weighs up to 55kg!

A **MARA** has a long neck and head and hoof-like claws. It looks like a cross between a hare and a deer! The Argentinian rodent can run at speeds of up to 45km an hour.

A **MEERKAT** lives with lots of other meerkats in Africa and they all look out for each other.



The **MUSKRAT** has got webbed back feet, a thick waterproof coat and is a good swimmer.

The **NARWHAL** is the only whale with a tusk. It's really a tooth and can measure up to 3 metres. Narwhals live in the Arctic Ocean.

An **OCELOT** is a big spotted cat that lives across the American continent. Ocelots have been hunted by humans for their fur.

The **OKAPI** lives deep in the African rainforests. No-one outside Africa had ever seen one until 1901. It has stripey back legs and looks like a horse with extra long legs and an extra long tongue.

The **ORCA** or killer whale is the largest whale.

A **PIPISTRELLE** is a tiny bat. Its body is so small it can fit into a matchbox.

A **PLATYPUS** lays eggs. It has soft fur, a rubbery beak and webbed feet and lives in lakes and rivers.

The **PRONGHORN** can run really fast – at 50km an hour and even up to 80km an hour for short stretches.

A **QUOKKA** is a marsupial and lives in Australia.

The **RACCOON** lives in the woods in north and central America, but also lives in towns and steals from rubbish bins at night.

A **SABLE** has beautiful soft thick fur and lives in forests in Siberia, Korea and Japan. Its fur keeps it warm – and humans like to wear it too.

The **SAMBAR** is a relative of the red deer.

A **SERVAL** is an African big cat with extremely good hearing.

A **SIAMANG** is a large gibbon, weighing up to 13kg.

A **STOAT** is mostly brown in the summer but often turns white in winter. Its white coat is called an ermine.

PICTURES COURTESY OF LONDON ZOO

# Wordsearch mammals continued

A **UAKARI** has a bright red bald face and head and lives in the Amazon rainforests. It stays high in the treetops away from other animals.

The **VAQUITA** is a member of the dolphin and whale family.

A **VICUNA** is a small relative of the camel and lives high in the Andes mountains in south America. It can run as fast as 50km an hour.

The **WALRUS** spends a lot of time in the Arctic Ocean but comes on land to have babies.

The **YAK** has long shaggy hair and short legs. It lives in the Himalayas in Tibet.

AARDVARK
AGOUTI
ALPACA
AYE-AYE
BABIRUSA
BOBCAT
BOUTO
CAPYBARA
CARACAL
CAVY
CHINCHILLA
CHITAL
COATI
COYOTE
DINGO
DOUROUCOULI
DROMEDARY
ELK
FOSSA
GNU
INDRI
JAGUAR
KOALA
KOB
LANGUR
LEMMING
LYNX
MANDRILL
MARA
MEERKAT
MUSKRAT
NARWHAL
OCELOT
OKAPI
ORCA
PIPISTRELLE
PLATYPUS
PRONGHORN
QUOKKA
RACCOON
SABLE
SAMBAR
SERVAL
SIAMANG
STOAT
UAKARI
VAQUITA
VICUNA
WALRUS
YAK

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# A problem shared

**Thank you for sending so much advice to the 2 readers whose problems we printed last time. Here are some of the things you said:**

**"A boy in my class invited every single kid to his birthday party apart from me. I'm in year 6 and this class has been together since we started school. There are 31 of us and he sent out 29 invites. I feel really hurt and left out. Why did he do this?"**

"I showed your letter to my mum and she was really shocked. She said she wouldn't have allowed me not to invite just one person, so that boy's mum is as much to blame as he is. If someone can behave like that, they are not worth having as a friend." **Cecilia, age 9.**

"Would you really have wanted to go the party of someone who could behave in such a mean and horrid way? His mum and dad must be pretty mean too to have allowed him to leave you out like that." **John, age 13.**

"Nobody would just do that, there must be a reason. Ask the boy why he invited everyone apart from you. It could be that you did something bad and he didn't like it." **Jamal.**

"You should tell someone that you are feeling left out. Or maybe you can work out your problems by talking to the boy." **Josephine and Christiana.**

"Perhaps the boy has had problems with you in the past. Have you behaved badly towards him or in a way that might have made him think you would ruin his party? I think you should get your mum to talk to his mum and then you would find out why it happened and try to sort things out." **Joe, age 11.**

"We think what happened to you was terrible. You should make lots of friends, then invite them to your party. Make sure you don't invite the boy who didn't invite you, so he will know how it feels to be left out. Or tell lots of people about what happened. Then when people go past, they can say he should be ashamed of himself." **Christopher and Sachin, age 10.**

"We are really sorry about what happened. Our advice is: don't be his friend; leave him out of your games; do the same thing to him so that he can see how it feels; tell your parents about it; think about what you might have done to him to get him upset; discuss it with your friends." **Candice and Cigdem.**

**"All my friends are going to the local secondary school next year and I'm not because my parents think it is rubbish. I shall have no friends at the school my parents want to send me to and I don't think I am going to get on well there. What shall I do?"**

"Don't worry, there are times in life when everybody has to move on, and you will always make new friends. Just try your best, enjoy yourself, and you will adjust in the end." **Benny, age 9.**

"I think that you should sit down with your parents and talk to them about it. Tell them it is your decision too. Have you visited the school and decided you like it, or do you just want to go where all your friends are going? If you go to the school your parents want you to go to, you will meet new friends and still be able to see your old friends out of school. Maybe the school you don't want to go to might give you a better education. Just think it through again." **Catherine, age 10.**

"Don't worry about it. When you go to the secondary school your parents want to you to go to, you will make new friends. Your parents probably want you to go there to have a good education." **Fai, age 10.**

"You could make new friends and keep in touch with your other friends by 'phone, by writing, or by e-mail, then you could meet them outside school. Just go ahead and you will be fine. Good luck!" **Amira, age 9.**

"I was the only girl in my primary school that went to my secondary school. I hated the idea, just like you, but my mum and dad really wanted me to come here. First of all I felt really unhappy, and then I started to make an effort and talk to people and now I have loads of friends at school. I've got the best of both worlds because I've got friends outside school too." **Elin, age 12.**

"You're lucky that you got into the school your parents want to send you to. My parents didn't want me to go to the local school for the same reasons, so I had to sit loads of different tests to try to get into schools they thought were better. When I failed them all I felt terrible and ended up going to the local school. I felt I had let my mum and dad down." **Thomas, age 13.**

## Can you help these 2 readers?

"I hate school dinners but my mum says I can't have packed lunch because she hasn't got time to make it and can't afford it anyway. The dinners at our school are disgusting and I end up leaving everything and feeling really hungry all afternoon."

"I have an urge to steal, even though I think it's wrong. Yesterday, I stole a Parker Pen off my best friend and £20 off my mum. Now I have the urge to steal everything I want or see that I don't have. I know I need help, but I can't tell my parents."

Send your advice to:
**No Kidding! Freepost**
**London 6868**
**PO Box 10427**
**London N8 8BR.**

If you've got a problem to share, write to us at the same address.

Special thanks to Belmont Junior School, Wood Green, north London.

# ARE YOU EVER SPOTTY?

**Boils, blackheads, carbuncles, pustules, chicken pox blisters... there are all sorts of different spots and almost everyone gets some sort at some time in their life. Different things make spots appear on the skin of kids, teenagers, grown-ups and even babies, grannies and grandads.**

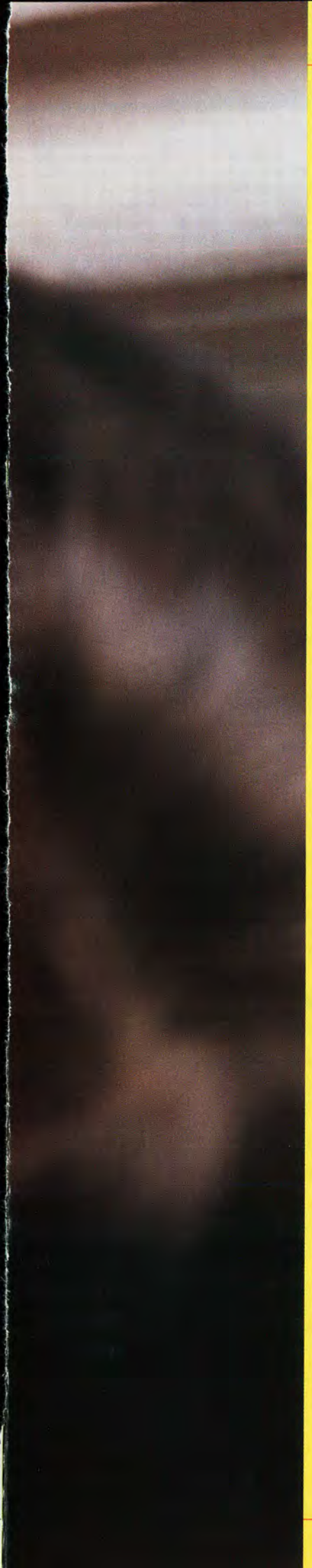


PHOTO: JENNY MATTHEWS

## Fighting spots

A spot can appear if a germ called *staphylococcus aureus* gets inside one of your hair follicles, the tiny, tiny holes in your skin through which hairs poke out. Once the germ is inside, your body starts to fight it by sending white blood cells to destroy it. Some of the white blood cells die doing battle with the germ and get thrown out of the body as *pus*, the yellow stuff you sometimes see inside spots.

If the germ manages to wiggle further down to the root of your hair in the second layer of your skin – *the dermis* – the fight can go on for a longer time. The spot might become a sore red lump called a *boil*. Boils can get bigger and more painful and sometimes have lots of pus inside them. If the infection from the germ is really bad, a group of boils might appear: this group is called a *carbuncle*.

If you get a bad boil, your doctor might give you antibiotics to help fight the germ causing the infection. Sometimes, doctors cut open carbuncles to let the pus inside get out.

Staphylococcus aureus can cause another spotty problem called *impetigo*. The germs get inside your skin through small cuts and scratches and make little red spots appear on your hands, face or legs. These little spots turn into scabby patches that get bigger every day. Impetigo is easy to catch because the stuff that oozes from the spots is full of germs.

## Growing up spots

As your body grows up, it makes more *sebum*, an oily liquid that helps keep your skin soft and bendy and stops it drying out. Sebum is made in tiny *sebaceous glands* which sit in the second layer of your skin, the *dermis*, next to your hair follicles. The sebum gets out onto your skin through the same little holes from which your hairs grow.

Sometimes these holes get blocked and the sebum can't get out. You can see the blockage on the top layer of your skin – the *epidermis* – as little spots called *blackheads*. If lots of sebum builds up behind the blocked hole, it can get infected by bacteria. The infection shows as lumps on the skin.

These sort of spots are called *acne* and are most common on the face, back and chest – the parts of your skin with the most sebaceous glands. On your face, there about 600 sebaceous glands in every square centimetre of skin!

Older people can get acne too if extra sebum is made in their bodies. Doctors think stress might make hormones – the chemicals that tell the skin to make more sebum than usual – whizz around.

## Virus spots

Kids get spotty if they catch *chicken pox* or *measles*. Both these illnesses are caused by viruses. Germs, or bacteria, are tiny living things, but viruses are non-living "bags" of chemicals. A virus invades just one cell in your body, takes it over and copies itself. The copies can then travel in your blood to different parts of your body. Bacteria can be killed by antibiotics – viruses can't be. Bacteria and viruses that invade our bodies and cause infection or illness are called *pathogens*. Chicken pox is caused by a virus called *herpes zoster*. Your blood carries copies of the virus to all parts of your body. Cells in your epidermis (the top layer of skin) get infected and fill up with a clear fluid which comes from your blood. Within a few days, the swollen cells burst and get covered by scabs. If you scratch these spots, they can become infected with germs and leave scars.

Cells swollen with fluid are called *vesicles* – the virus *herpes simplex* also causes vesicles to appear. We call them *cold sores*.

Measles spots come out about 4 to 5 days after you've caught the illness. As your body fights off the invasion of the measles virus, small tubes that carry blood in your skin called *capillaries* leak a bit. The leaking blood makes the small red spots appear.

Another spot problem caused by a virus is called *molluscum contagiosum* or *water warts*. The spots are small and white – if you look at them through a magnifying glass, they look a bit like doughnuts with a dimple at the centre. NK!

**Baby spots**
Even new babies get spots! The tiny openings that let sweat come out of the skin can sometimes become blocked and cause tiny red spots called *miliaria*.

**Names of spots**
**Different sorts of spots have different names – like *vesicles*, which are cells swollen with fluid. A *papule* or *pimple* is a red lumpy spot. A *pustule* is the name for a spot which is full of pus.**

**Age spots**
As humans get older, their skin gets older too! Sometimes flat brown spots appear just because the surface of the skin is ageing. These are called *age* or *liver spots*.

Jack in the Boxes are launched and batteries are held in place by them. Some watches and clocks keep time because of them. They help cars keep their balance and make beds bouncy.

# SO WHAT MAKES SPRINGS. . .

Springs spring when they are squashed because the material from which they are made wants to go back to its original shape. Springs keep things like batteries in place because they push outwards as they try to open up.

Springs are made of materials that are *elastic* – plastic, rubber, steel or other metals. A material is elastic if when you stretch it and let it go, it returns to the shape it was first of all. Some materials are much more elastic than others: how elastic a material is depends on the way the atoms that make it are arranged, and on the way they are "stuck" together.

The atoms in metals are arranged neatly in rows and columns with regular *bonds* – the forces caused by electricity that glue the atoms together. The bonds in metals are a bit like springs themselves. When you stretch a metal, the atoms are pulled apart. When you let it go, the bonds "spring" back and pull the atoms together again.

Rubber is made up of long tangled-up chains of atoms called molecules and is really elastic. When you stretch rubber, the molecules are straightened. When you let go, they become all tangled up again.

Some materials, like glass, aren't at all elastic. Glass is *brittle*, which means when you hit it, it breaks. That's because glass is a liquid that becomes solid when it is suddenly frozen. Instead of being neatly arranged, its atoms are all over the place

● Robert Hooke, an English scientist and inventor, studied metals and looked at what happened to them when they were stretched. Scientists still talk about *Hooke's Law* when they describe the way metals stretch. Hooke, who was born in 1635 and died in 1703, also invented a new sort of microscope that had more than one lens inside it. He used his *compound* microscope to help him draw tiny animals and cells.

# SPRING?

● When scientists talk about *tough*, they are describing how the atoms that make up a material are joined together. As well as *elastic*, *strong* and *brittle*, materials can be *plastic*, *hard*, *soft*, *malleable* or *ductile* as a result of the way the atoms are arranged and "glued" together. A biscuit, for example, is weak and brittle. Steel is hard and elastic, while wood is soft and tough. Malleable means a material can be hammered into thin sheets and ductile means a material will stretch easily without breaking or cracking.

● Steel is an *alloy* metal – a mixture of metals and other ingredients. There are different sorts of steel – *carbon steel*, containing iron and carbon, is used to make springs.

and there are no regular bonds. Irregular bonds also make a material less *strong* than a material made up of atoms with bonds that are arranged in a regular way.

Materials that are elastic and strong always try to return to their original shape. The curl shape of springs also helps them want to spring out when they are squashed, and spring back when they are stretched – a bit like curly hair.

So Jack in the Boxes work because the spring on which the Jack sits is bigger than the box. You have to squash it to make it fit in – when you lift the lid, it springs out. When you wind up a clock, you tighten tiny springs inside it. The springs then start to uncoil and turn wheels that turn the clock's hands. A car's "suspension" is basically lots of springs underneath its body which squash and unsquash as you drive over bumps in the road. And when you jump on a "sprung" mattress, the springs inside are squashed – and then spring out again!

# at school

PHOTO: REHAN JAMIL

**20 kids at Hazelbury Juniors in Edmonton, north London, are Buddy Blue Caps – their job is to make the playground a happier place for everyone during playtime and lunchtime.**

10 of the Buddies are in year 4 and the other 10 are in year 6. There is one boy and one girl from each class in the 2 years.

This is the first group of Buddy Blue Caps at Hazelbury and they were chosen and then trained to do their job by teachers. They are on duty every day and are there to offer to play with or talk to anyone in the playground who looks lonely, upset or left out. If someone is hurt, the Blue Caps take them to the welfare office, and if someone is fighting, they tell a teacher. If any other kid is rude to them, they say "thank you", and walk away!

They say it's all about making the playground a really friendly place and that they really enjoy it because the year 4 Buddies have got to know almost everyone in years 3 and 4, and the year 6 Buddies now know almost everyone in years 5 and 6 – about 600 kids in total.

Buddies suggest different games to play if someone looks lost and lonely – but if another kid doesn't want to play or talk, they leave them alone after asking 3 times if they "are sure".

Next term, teachers at Hazelbury will choose 20 new Buddies. But these first Buddies say they will still act in the same way in the playground: "Just because you're not a Buddy Blue Cap doesn't mean you can't go and talk to other people or help them out. If everyone was a Buddy in the playground, it would be a much nicer place." NK!

# What makes things

bluegreenredyellowblackpinkbro
wnorangemauveturquoiseindigo
urpleaquamarinegreycerisetaup
khakivioletochremagnoliacyanm

**Pigments and dyes are the substances that give things colour. Many living things contain pigments – chlorophyll makes leaves on plants and trees green, for example. Melanin colours our skin, beta-carotene makes carrots orange. Haemoglobin colours our blood – and also makes the faces and bottoms of baboons red!**

Both pigments and dyes are coloured substances. Pigments are solid and do not dissolve, while dyes dissolve in water and other liquids. Dissolved dyes are used to colour fabrics – they soak into the material and the molecules that make up both the dye and the fabric stick together. Pigments would not colour fabrics – because they are solid, they would sit on top of the material.

Some pigments are made by grinding rocks into a powder, but most are ground-up metal compounds – like titanium dioxide, a white powder used to colour both toothpaste and paint. To make paint, solid bits of pigment are mixed with a sticky liquid called a binder. As the paint dries, the binder hardens and holds the pigment in place.

People have used pigments and dyes to give things colour for thousands of years. Rich and important Romans wore clothes dyed with Tyrian purple, a dye taken from a snail that lives in the Mediterranean Sea. Until 150 years ago, all dyes were natural substances like Tyrian purple, taken mostly from plants and insects. Indigo plants made blue dye which was used by ancient Egyptians, Greeks and Romans as well as people living in Britain and Asia thousands of years ago. In the 16th century, explorers from this country brought new dyes back with them from South America and the West Indies – like the black dye from the tree logwood and cochineal, a red dye, made from tiny insects.

Then in the 1850s, British chemist William Perkin accidentally made the world's first artificial dye. He was working in a laboratory on a different experiment and ended up making a substance he called mauveine which he found out coloured things mauve. In 1857, he set up a factory to make the dye and sell it. Other chemists started working out what natural dyes and pigments were made from, and then making them in the laboratory.

Later, chemists started to invent brand new substances that could be used as dyes and pigments. Many of the chemicals used to make these dyes and pigments come from oil.

Since then, the use of dyes and pigments found in nature has almost stopped because chemists have invented so many better and brighter artificial ones which are used to colour paints, inks, plastics, clothes, toys... NK!

PASCAL GOETGHELUCK/ARDEA LONDON

■ The red dye cochineal is made from the dried, mashed up bodies of female insects that eat cactus and live in central and south America. The insects are brushed from the cactus and then killed in hot water, or dried out in the sun or an oven. It takes 70,000 insects to make a 500g of cochineal. Nowadays, dyes made by chemists are mostly used to colour things red.

RS•C
ROYAL SOCIETY OF CHEMISTRY

# who are you

Adam
Amira
Amy
Christopher
James
Lucinda
Nikita
Qamar
Shahima
Zahra

"Hi! My name is Qamar Hussein. I'm 10 years old and I have a sister and 3 brothers. I'm also the oldest girl in the family. My mum's a single parent and she studies hairdressing at college. I really adore her. My hobbies are: reading *No Kidding!*, roller skating and kickboxing. I have a whole box full of *No Kidding!* magazines because I think they're brilliant. I go to South Park Primary School and I'm in year 6. I really like my teacher, Mrs Terrett, but she doesn't like people wasting time. My best friend is Paige because she is really understanding."
**Qamar lives in Ilford, Essex.**

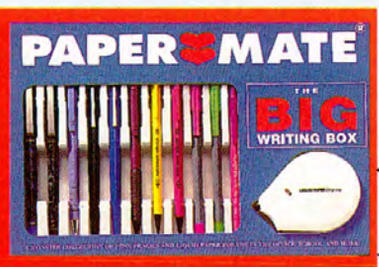
"Hi, my name is Adam. I go to Beckford Primary School. I am 8. I love my family. My best friend is Sandro. Maths is great, so I want to be a CD engineer. I went to Morocco in the summer and did beach surfing. Wow! In Marrakesh, I climbed a towering mountain. I felt like Sylvester Stallone. Then I held a python around my neck. I felt like a superkid. Then I went on a zany ride. I felt my cheeks and my body go all over the place like a jelly. But what was really hot was snail soup for a snack!"
**Adam lives in West Hampstead, north London.**

"Hi, my name is James Quinlan. I am 11 years old. I was born 8 February 1990. I live in Enfield. I go to George Spicer Primary School. My best friends at school are Daniel Paldino, Michael Holloway and Chris Arthur. I play for George Spicer 1st team. My favourite subject at school is PE. I really enjoy playing football, cricket, tennis and athletics, but I couldn't do any of them after I had an operation on an ingrown toenail. I also play for Enfield Cricket Club. My favourite television programmes are wrestling, *Poke'Mon*, *Rugrats*, all kinds of sports programmes, *The Simpsons*, *Robot Wars* and *Friends*. My grandmother won a bronze medal in the Olympics and my uncle won a bronze medal in the Commonwealth Games. I have got a Playstation and a Gameboy Colour."
**James lives in Enfield, Middlesex.**

"Hi, my name is Amira Ferchichi. I am 10 years old and my favourite hobbies are singing, acting and swimming. I have a family of 5, I have 2 brothers, Adam and Layth. I go to a school in Ealing called Hathaway Primary School. My favourite pop stars are Britney Spears and Don Phillips. One day, hopefully, if I could be in a band with my friends, I would call the band... *White Angels!*
**Amira lives in Hanwell, west London.**

"Hi, I am Shahima, aged 10, from Smithy Street Primary School. Soon I'll be going to secondary school and I am very excited but nervous at the same time. I have a hobby that often gets me into trouble: surfing the net for useless but interesting (to me) info. My ambition in life is to be a stunt co-ordinator for films like *Mission Impossible 2*. Last year I went to Bangladesh for a family holiday. I found the 'plane journey very long and tiring, but it was definitely worth it in the end! Bangladesh is the most exciting country I have ever been to. It has lots of wild and exciting plants and lots of fresh fruit and veg. Yum! I saw many different animals and bugs. There were a lot of cockroaches and a lot of snakes – all harmless and very beautiful."
**Shahima lives in Stepney, east London.**

**Write and tell** us who you are – if we print your letter, we'll send you one of these BIG Writing Boxes.
Write to Who are You? No Kidding!, PO Box 10427, London N8 8UP.



"My name is Zahra Jaffry and my name means a white flower in Arabic. I am a Muslim with the age of 9 and I was born in St Mary's Hospital at 7am on 9 May 1991. I have a sister named Sabrina with the age of 7, and a younger brother named Abbas with the age of 5. My favourite sport is swimming because the water makes me feel cool and relaxed. I go to Millbank Primary School and my favourite subjects are art, science, DT and PE. I like art because I get to see lots of strange and beautiful colours. I like science because we get to do lots of fun experiments and investigations. I like DT because we get to make interesting things and fiddle with things not known. PE is fun because it is the only time in the whole school day we get to stretch our bodies. My favourite friend is Zehra Mazhari with the age of 9 and we have been friends for 8 long years."
**Zahra lives in Westminster, central London.**

"Hello, my name is Nikita Patel. I am 11 years old and go to Whitefriars First and Middle School. I have one younger brother called Nilay who is 8 years old. We both collect stamps and have lots of unusual and foreign ones. My other hobbies are playing the guitar, acting, reading and collecting foreign money. I am soon going to have braces and the orthodontist is going to pull out 4 of my teeth! My favourite author is Jacqueline Wilson."
**Nikita lives in Harrow Weald, Middlesex.**

"I have blue eyes, ginger hair, small ears and I have freckles. My teeth are like vampire's. My age is 8 and a half. My name is Christopher Mockford."
**Christopher lives in Mitcham, Surrey.**

"My name is Lucinda Gulshan. I am 10 and I go to St James and St Michael's CE School. Last year, Tony Blair came to our school to play football as part of a football anti-racism campaign. I have been in a newspaper and on TV posing with a model for Refugee Week. My mum has written a book and my hobbies are wrestling, entering competitions and watching TV."
**Lucinda lives in central London.**

"Hi, my name is Amy Martin. I am 8 years old. I have been a Brownie for a year now. I have one older brother who is 12 years old (he is really annoying). My mum is called Bernice, my dad is called Lee. I have 2 pets, a parrot and a dog. My parrot is called Topsie, my dog is called Remy. I was born in Rush Green Hospital on the 13 June 1992. I have moved once from Dagenham and I really miss my old friends. My new best friends are Abbie and Lauren. My hobbies are swimming and arts and crafts. I go to Langtons Junior School. My teacher is called Mr Grainger. I am in year 4. My best subjects are art and PE, including games. Thanks for reading my letter."
**Amy lives in Hornchurch, Essex.**

# WIN A BO

## 1 Just Annoying

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illustrated by Terry Denton


Nine hilarious stories about Andy who is trying to be the world's most annoying kid. The book is bursting with practical jokes, great gags and terrific tricks. Flicker pictures on every page, alongside words of wisdom and crazy cartoons. Hours of hilarity for every reader.

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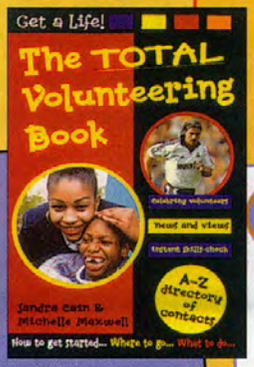
Written by award-winning authors, aged 8-10, Write Here, Write Now is an inspirational collection of stories, poems and scripts that will entertain young readers and enthuse young writers.

**Write Here, Write Now A Celebration of Children's Writing, £4.95, published by Cambridge University Press**

## 3 The TOTAL Volunteering Book

by Sandra Cain
and Michelle Maxwell




This book will tell you everything you need to know about volunteering – what it is, why lots of people do it and how you can get involved. It's packed with loads of bright ideas, contact details, website addresses, details of celebrity volunteers and quizzes to work out what sort of volunteering would suit you.

**The TOTAL Volunteering Book, £6.99, published by A & C Black**

## 4 Vernon Bright and the Faster-than-Light Show

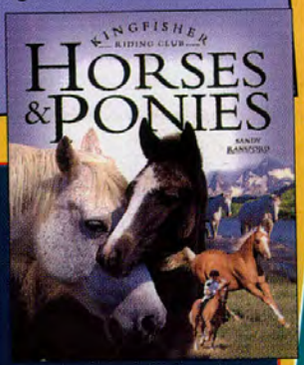
by Steve Barlow and
Steve Skidmore


Vernon Bright plans to video the school play. When he adapts the latest high-tech video recorder, Vernon finds he can video the future – as well as the past! Enjoy a good story and learn about the science of light at the same time.

**Vernon Bright and the Faster-than-Light Show, £3.99, published by Puffin Books**

## 5 Kingfisher Riding Club: Horses and Ponies

by Sandy Ransford

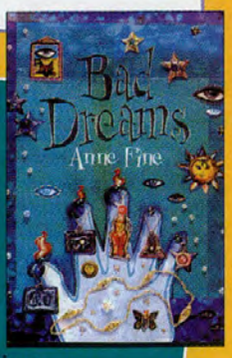



An introduction to horses and ponies. Specially commissioned photographs show beginners how to approach, care for and exercise a horse or pony, and there are tips on breeds and riding. For the more experienced rider, the book explores the world of pony shows, dressage and eventing. Part of the Kingfisher Riding Club series, a brand new series for young horse and pony lovers.

**Horses and Ponies, £12.99, published by Kingfisher**

## 6 Bad Dreams

by Anne Fine




Mel is the class bookworm. She prefers books to people and doesn't want to look after the new girl, Imogen. But there's something very strange about Imogen and, as Mel slowly uncovers the truth, she begins to realise that stories don't just happen in books – and that only she can stop Imogen's bad dreams...A gripping tale about the importance of being free to be yourself.

**Bad Dreams, £4.99, published by Corgi Yearling**

**Terms and conditions:** 1. Closing date: 20 April 2001. 2. There are no cash alternatives. 3. Only one entry per child. 4. The winners will be the 10 people whose names are drawn out of the 10 "hats" on 20 April. 5. Winners will be sent their prizes by post.

# OK

**Just send in your name and address on a postcard to: No Kidding! Book PO Box 10427 London N8 8UP by Friday 20 April 2001.**

**Write down the title of the book you would like to win. The first names drawn out of the 10 "hats" on 20 April will be the winners.**

## 7 The Marshall Mini Series

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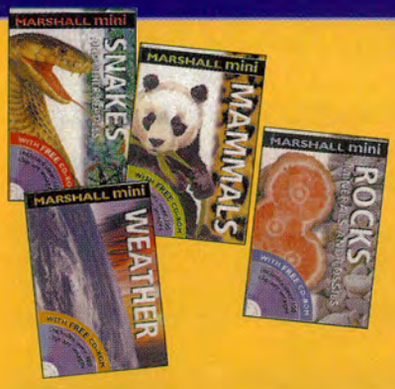


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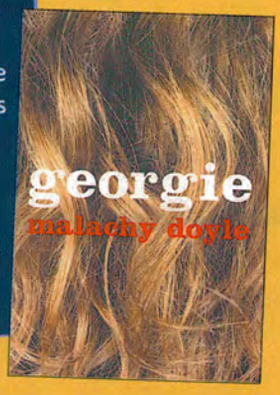


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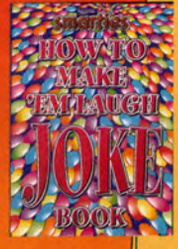


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**London's most famous bus is still carrying passengers after 40 years. What is it called?**

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